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10/760,273

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Kia Silverbrook

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04/28/2006

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BALMAIN, NSW 2041  
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EXAMINER

LEBRON, JANNELLE M

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 04/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/760,273

Applicant(s)

SILVERBROOK ET AL.

Examiner

Jannelle M. Lebron

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-11 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Silverbrook et al. (US Patent 6,439,908).

3. Regarding claim 1, Silverbrook et al. discloses a printhead module (12 in fig.2) for a printhead assembly (10 in fig.2), comprising at least two printhead integrated circuits (18 in fig.2), each of which has nozzles (42 in fig.3) formed therein for delivering printing fluid onto the surface of print media, and an elongate support member (28 in fig.2) adhesively supporting the printhead integrated circuits (col.2, lines 9-16),

wherein the support member (28) has a plurality of longitudinally extending channels (72 in fig.8) for carrying different printing fluids for the printhead integrated circuits (18), and

the support member (28) is selectable to meet specific requirements as to the number of said printing fluids to be employed for printing (column 2, lines 17-19, 59-67).

4. Regarding claim 2, Silverbrook et al. discloses a printhead module (12) wherein: the support member (28) and the at least two printhead integrated circuits (18) are formed as a unitary arrangement with at least one fluid distribution member (26 in

Art Unit: 2861

fig.11) mounting the at least two printhead integrated circuits (18) to the support member (28), and an electrical connector for connecting electrical signals to the at least two printhead integrated circuits (column 3, lines 59-65)); and

the support member (28) includes a plurality of apertures (as shown in figure 8) extending through a wall of the support member (28) arranged so as to direct the printing fluid from the plurality of channels (72) to associated nozzles in both, or if more than two, all of the printhead integrated circuits (18) for printing by way of respective ones of the fluid distribution members (column 4, lines 41-44).

5. Regarding claim 3, Silverbrook et al. discloses a printhead module (12) wherein the printhead module (12) is arranged to be removably mounted to the printhead assembly (column 1, line 66 – column 2, line 5).

6. Regarding claim 5, Silverbrook et al. discloses a printhead module (12) wherein the printhead integrated circuits (18) are individually supported upon a separate said fluid distribution member (column 2, lines 17-19).

7. Regarding claim 8, Silverbrook et al. discloses a printhead module (12) wherein a lower surface of the at least one fluid distribution member (26) is attached to the upper surface of the support member (28) by an adhesive material (column 6, lines 14-29).

8. Regarding claim 9, Silverbrook et al. discloses a printhead module (12) wherein the adhesive material is deposited to form a gasket (40) which surrounds each of the apertures of the support member (28) and each of corresponding apertures formed in the lower surface of the at least one fluid distribution member (26) so as to form a seal

Art Unit: 2861

between the respective apertures (as shown in figures 8, 10, and 11; column 6, lines 14-40).

9. Regarding claim 10, Silverbrook et al. discloses a printhead module (12) wherein:

the apertures of the support member (28) are formed in a row extending across the support member with respect to the longitudinally extending direction of the support member (as shown in figure 8); and

two deposits of the adhesive material are deposited on either side of the row of apertures to provide stability for the mounting arrangement (column 6, lines 16-20).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 2861

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook et al. (US Patent 6,439,908) in view of Silverbrook (WO 2001/089849).

Silverbrook et al. ('908) meets the claimed limitations as set forth except "a support member formed with a further channel for delivering air to the at least two printhead integrated circuits for maintaining the nozzles of the at least two printhead integrated circuits substantially free from impurities."

Silverbrook (2001/089849) teaches an ink distribution structure that supplies air to each print chip (27) via an air inlet port (61) thus preventing the build-up of any dust or unwanted contaminants at the apertures (44) in the nozzle guard (page 7, lines 5-9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include a channel for delivering air to the printhead circuits. One would have been motivated to modify the invention to improve print quality as taught by Silverbrook.

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook et al. (US Patent 6,439,908) in view of Lu et al. (US 2003/0007042).

Silverbrook et al. teaches a sealing adhesive; however, it does not disclose the sealing adhesive being a curable resin.

Lu et al. discloses a sealing adhesive being an epoxy, a type of resin (paragraph 0017).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Silverbrook et al. with that of Lu et al. in order to create a more durable apparatus.

***Allowable Subject Matter***

14. Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowance of claims 6 and 7 is the inclusion of the limitation of a printhead module for a printhead assembly that includes laminated stack distribution layers and the middle layer has smaller apertures than the apertures of the lower layer, and the upper layer has smaller apertures than the apertures of the middle layer. It is this limitation found in the claims, as it is claimed in the combination of, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

***Response to Arguments***

16. The drawings and specification have been amended and a terminal disclaimer has been submitted.

17. Applicant's arguments filed 2/13/2006 have been fully considered but they are not persuasive.

Applicant argues that Silverbrook et al. ('908) does not disclose an arrangement in which modules in which modules have more than one printhead chip; however, a

Art Unit: 2861

"printhead chip" is not claimed. Applicant claims a "printhead integrated circuits", and in column 14, lines 49-50, Silverbrook et al. discloses sixteen data connections.

Furthermore, the current application contains integrated printhead circuits 51 on tiles 50 that are arranged on top of the fluid channel member 40, which extends the length of the printhead as can be seen in figure 4A. As stated in paragraph (0090) of the present application, "as illustrated in Figs. 1 and 2, sixteen printhead tiles 50 [each with one integrated printhead circuit 51 as seen in figure 5A] are provided in the printhead module 30." In figures 1 and 2, the arrow of 30 is pointing to a single printhead tile/integrated circuit, but the figures show that there are sixteen printhead tile/integrated circuits comprising the entire length of the printhead. Therefore, if sixteen printhead tiles are provided in the printhead module as stated, then the module must be the entire length of the apparatus shown in figures 1 and 2, with one fluid channel member 40 (or a series of sixteen interconnected fluid channel members) containing sixteen sets of outlet ports 42 as shown in figure 4A, and sixteen printhead tiles/integrated circuits on the upper surface of that one fluid channel member (or series of fluid channel members). Hence, either each printhead module (indicated by the arrow of 30 in figures 1 and 2) has only one printhead tile/integrated circuit, which contradicts the claim, or the printhead module is to be taken to mean the entire length shown in figures 1 and 2 where the module has at least two printhead tiles/integrated circuits and is shown in the figures with sixteen printhead tiles/integrated circuits.



Art Unit: 2861

A similar analysis can be applied to the cited reference, and the printhead module 10 can be taken to mean the entire length shown in figure 2 to satisfy the claimed printhead module of the instant application.

Applicant also argues that Silverbrook et al. does not teach or suggest one of ordinary skill in the art to modify the disclosed assembly; however, it would be obvious to one skilled in the art to modify the present invention with Lu et al., since the Silverbrook et al. invention includes an adhesive but does not disclose it being specifically curable resin and Lu discloses this type of adhesive, which can be used on any type of printhead. Furthermore, it would be obvious to one skilled in the art to modify the present invention with Silverbrook ('849) to supply air to each integrated circuit to maintain them free of contaminants.

### ***Conclusion***

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2861


the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jannelle M. Lebron whose telephone number is (571) 272-2729. The examiner can normally be reached on Monday thru Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JML  
04/19/2006

  
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PRIMARY EXAMINER  
04/17/06